

## IMAGING SYSTEM FOR VEHICLE HEADLAMP CONTROL

### ABSTRACT OF THE DISCLOSURE

An imaging system for use in a vehicle headlamp control system includes an opening, an image sensor, a red lens blocking red complement light between the opening and the image sensor, and a red complement lens blocking red light between the opening and the image sensor.

Each lens focuses light onto a different subwindow of the image sensor. The imaging system allows processing and control logic to detect the presence of headlamps on oncoming vehicles and tail lights on vehicles approached from the rear for the purpose of controlling headlamps. A light sampling lens may be used to redirect light rays from an arc spanning above the vehicle to in front of the vehicle into substantially horizontal rays. The light sampling lens is imaged by the image sensor to produce an indication of light intensity at various elevations. The processing and control logic uses the light intensity to determine whether headlamps should be turned on or off. A shutter may be used to protect elements of the imaging system from excessive light exposure.